TracVision® C3 Installation Guide

These instructions explain how to install the TracVision C3 on a vessel. Complete instructions on how to use the system are provided in the *User's Guide*.

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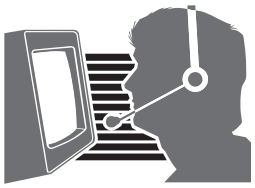
Who Should Install the System?

To ensure a safe and effective installation, KVH recommends that a KVH-authorized technician install the system. To find a technician near you, please visit **www.kvh.com/wheretogetservice.**

Linear vs. Circular Systems

The installation process differs, depending on the type of LNB (low noise block) installed in the antenna (linear or circular). These differences are noted throughout this guide. In general, North American satellites require a circular LNB, while European satellites require a linear LNB.

Technical Support



If you need technical assistance, please contact KVH Technical Support:

N. America, S. America, Australia:
Phone: +1 401 847-3327
E-mail: techs@kvh.com
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Phone: +45 45 160 180
E-mail: support@kvh.dk
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1 Inspect Parts and Get Tools

Before you begin, follow these steps to make sure you have everything you need to complete the installation.

IMPORTANT!

Always lift the antenna by the baseplate, never by the radome (see Figure 1).

a. Unpack the box and ensure it contains everything shown on the supplied Contents List. Carefully examine all of the supplied parts to ensure nothing was damaged in shipment.

b. Gather all of the tools and materials listed below. You will need these items to complete the installation.

- Electric drill
- 3/16" (5 mm), 5/32" (4 mm), and 3/32" (2.25 mm) drill bits
- 1/2" wrench or nut driver
- 3/4" (19 mm) hole saw and auger bit
- Phillips and flat-head screwdrivers
- Cutting pliers
- **Linear only:** 9/64" allen wrench
- **Circular only:** RG-6 or RG-11 (75 ohms) RF cable, if installing two or more receivers
- Silicone sealant, RTV, or equivalent
- 7/16" open-end wrench
- Construction adhesive suitable for the deck
- Augat IT1000 connector installation tool (KVH Part #19-0242)
- Satellite TV receiver(s) for your desired service *(see Figure 2 for a list of validated U.S./Canadian receivers; for information on connecting different receiver models, contact KVH Technical Support)*

Figure 1: TracVision C3 Antenna

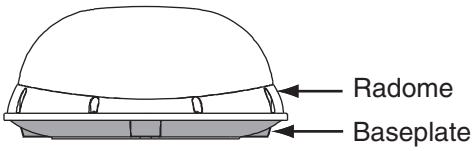


Figure 2: Receivers Validated for Use with TracVision C3

Standard-definition models		
DIRECTV	**DISH**	**Bell TV**
D12 D11 D10	311 211k 211	3100 4100
High-definition models		
DIRECTV	**DISH**	**Bell TV**
HD not supported	211k 211	6100 6131

2 Plan the Installation

Before you begin, consider the following installation guidelines:

- Minimize blockage. The antenna requires a 15° to 75° look angle to receive satellite signals (see Figure 3).
- Mount the antenna no higher than half the length of the vessel above the waterline.
- Choose a mounting surface that is flat, strong enough to support the antenna's weight (34 lbs, 15 kg), and rigid enough to withstand vibration without flexing.
- The antenna must be kept out of line with nearby radars to avoid damage.
- Select an antenna mounting location on the centerline of the vessel with the antenna's cable connectors facing the rear of the vessel (see Figure 4).
- Identify a safe location for the 3/4" (19 mm) cable access hole in the deck. The cable access hole should be located at least 6" (15 cm) away from the antenna's baseplate connectors (see Figure 4). Make sure you will not drill into any existing wires or aesthetic structures inside the vessel.
- Choose a dry, flat location for the switchplate that will be easily accessible to the user. Take into account the lengths of the cables, as well as accessibility to the equipment after installation.

NOTE: *If you need a longer power/data cable, KVH offers 45-foot (KVH part #32-0730-45) and 60-foot (KVH part #32-0730-60) cables.*

- **Circular only:**
  Identify a location for the grounding block within 27 feet of the antenna, within 5 feet of the receiver(s), and within 25 feet of a suitable chassis ground location.

Figure 3: Blockage from Obstruction

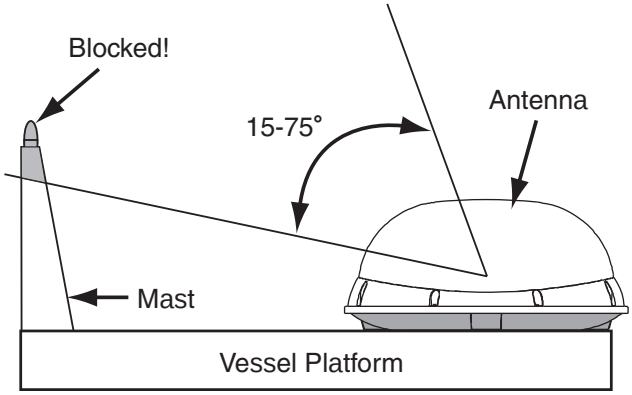
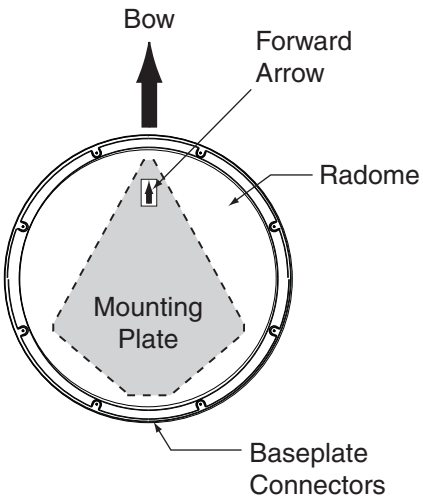


Figure 4: Antenna Orientation



3 Remove the Mounting Plate

Follow the steps below to remove the mounting plate.

a. Remove the eight screws and washers securing the radome to the baseplate (see Figure 5).

b. Carefully lift up the radome until clear of the antenna assembly and set aside in a safe place.

c. Using a 1/2" wrench or nut driver, remove the six bolts, nuts, and washers securing the mounting plate to the baseplate (see Figure 6).

NOTE: *Be sure to keep the bolts in case the antenna needs to be shipped to another location.*

d. Remove the mounting plate and set it aside for now (see Figure 7).

Figure 5: Removing the Radome

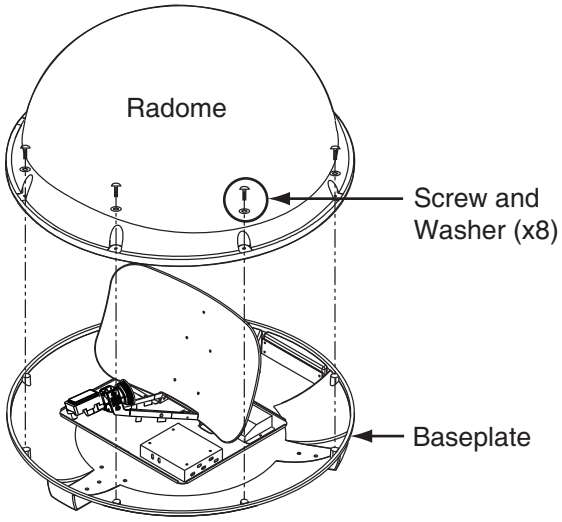


Figure 6: Mounting Plate Bolts (Top View)

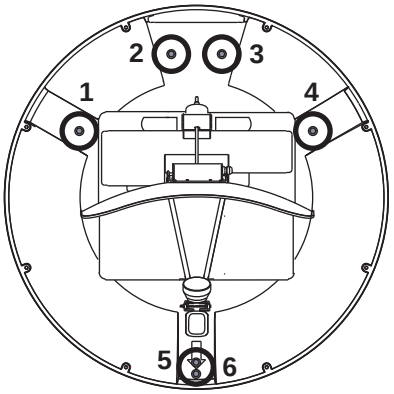
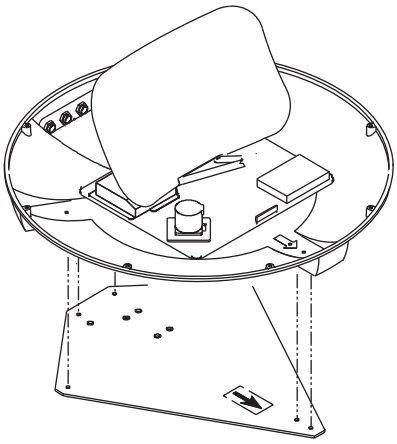


Figure 7: Removing the Mounting Plate



4 Remove the Shipping Restraints

At the bottom of the antenna, two tie-wraps prevent the internal antenna assembly from moving during shipment. Follow the steps below to remove these shipping restraints.

a. Using cutting pliers, cut and remove the two tie-wraps securing the antenna mechanism to the baseplate (see Figure 8).

IMPORTANT!

Once you have removed the restraints, keep the antenna level as much as possible and handle the antenna unit carefully. Improper handling might damage the unit.

b. After removing the tie-wraps, seal the four tie-wrap holes at the bottom of the baseplate with the plugs provided in the kitpack (see Figure 9).

Figure 8: Tie-Wrap Locations (Top View)

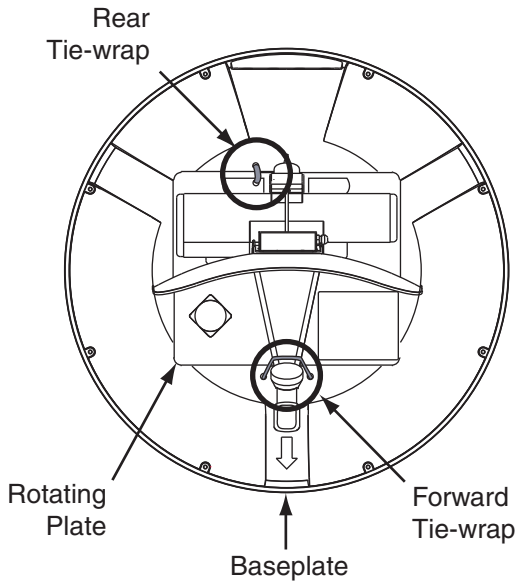
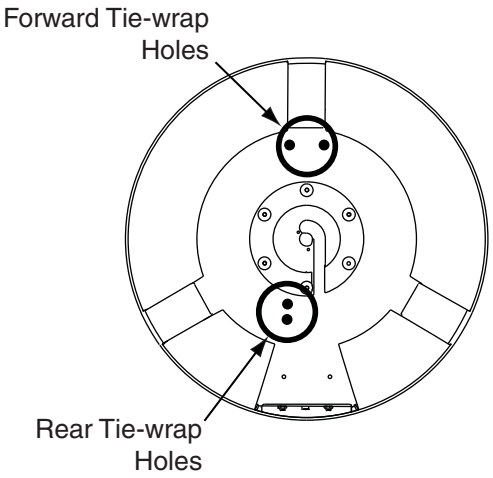


Figure 9: Tie-wrap Hole Locations (Bottom View)



5 Drill the Mounting Holes

Follow the steps below to drill the antenna mounting holes.

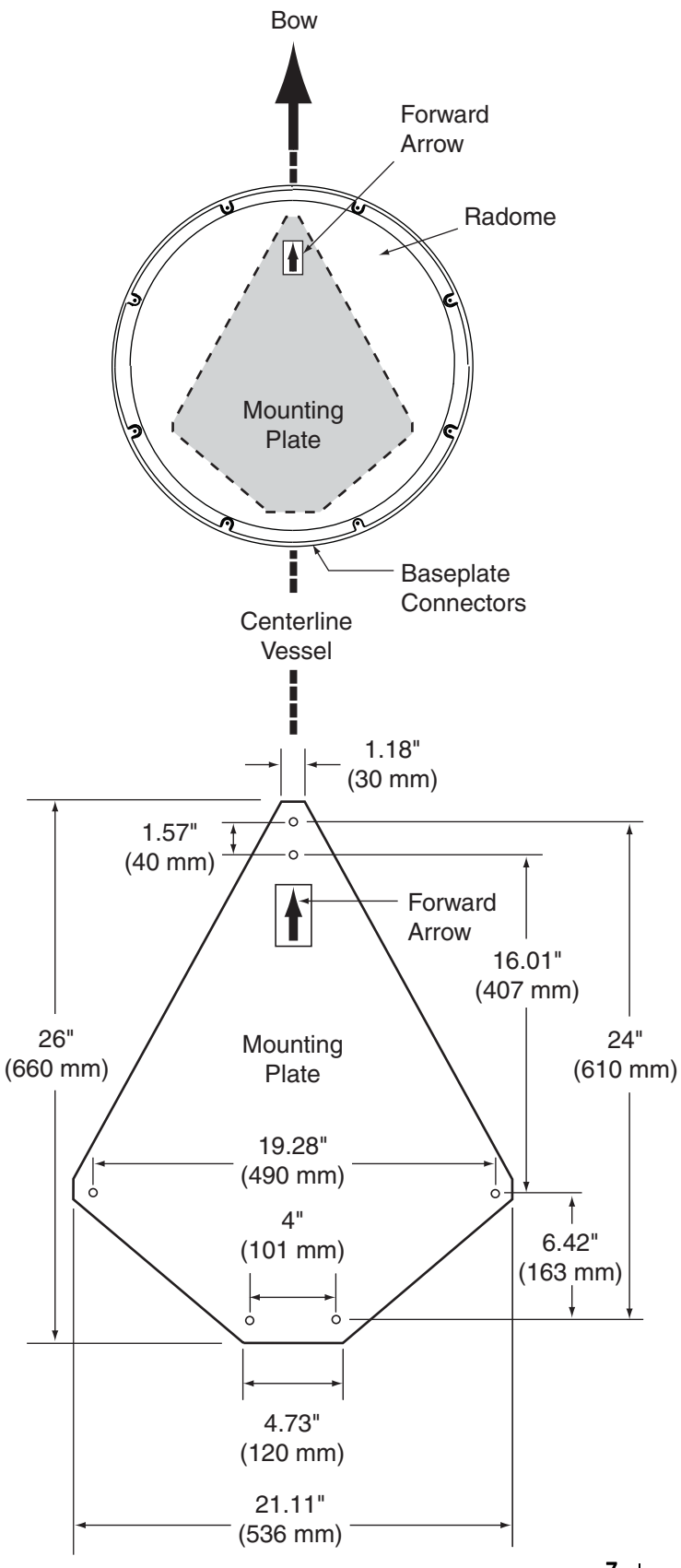
> **CAUTION**
>
> For your own safety, shut down vessel power before you drill or connect wires. Test the circuit to ensure no power is present.

a. Place the mounting plate on the deck at the location you chose in "Plan the Installation" on page 4. Ensure the mounting plate's forward arrow points towards the bow of the vessel (see Figure 10).

> ***IMPORTANT!***
>
> The locations of the mounting holes may vary slightly from one mounting plate to the next. Use the dimensions shown in Figure 10 for general reference only; use the mounting plate itself as a template to lay out the holes in the mounting surface.

b. Using the mounting plate as a template, lay out the locations for the six mounting holes. Then drill the six 3/8" (9.5 mm) holes in the mounting surface.

Figure 10: Mounting Plate Orientation



6 Mount the Antenna

Follow the steps below and refer to Figure 11 to mount the antenna to the mounting surface.

a. Apply a bead of silicone sealant around each mounting hole.

b. Reposition the mounting plate over the mounting holes. Line up the holes in the mounting plate with the holes in the mounting surface.

c. Apply a bead of silicone sealant around each mounting hole on top of the mounting plate.

d. Place the antenna unit on top of the mounting plate, ensuring all holes are aligned.

e. At each hole, place a 1/4" flat washer on a 1/4"-20 x 3" bolt (supplied in the kitpack) and insert it into the baseplate mounting hole from above.

NOTE: *Unless you need different hardware for a thicker deck, be sure to use the bolts supplied in the kitpack when mounting the antenna. Do not reinstall the mounting plate bolts that you removed in* *"Remove the Mounting Plate" on page 5*.

f. Apply a flat washer, lock washer, and the nut you removed in "Remove the Mounting Plate" on page 5, to each mounting bolt from belowdecks and tighten securely.

g. **Circular only:**
Reinstall the radome using the eight screws and washers you removed in "Remove the Mounting Plate" on page 5 (see Figure 12).

Linear only:
Do not reinstall the radome at this time. Later, you will need to adjust the skew angle of the antenna's LNB.

Figure 11: Mounting the Antenna

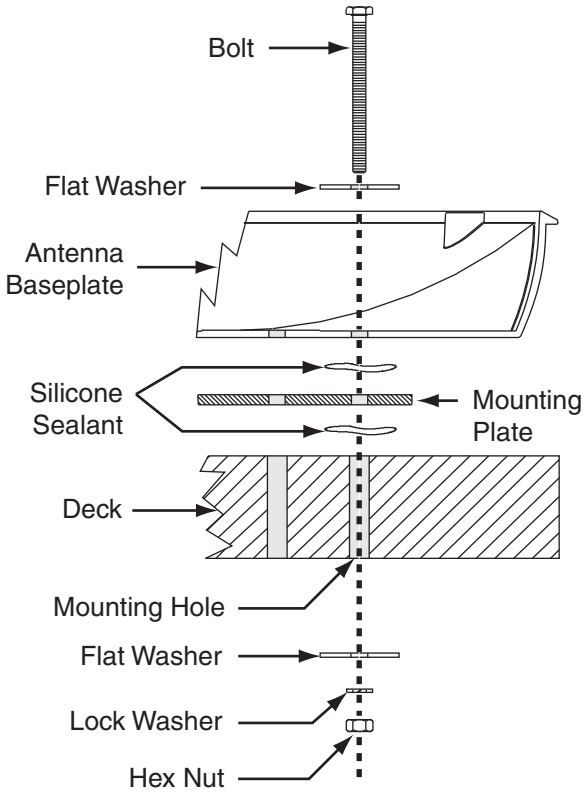
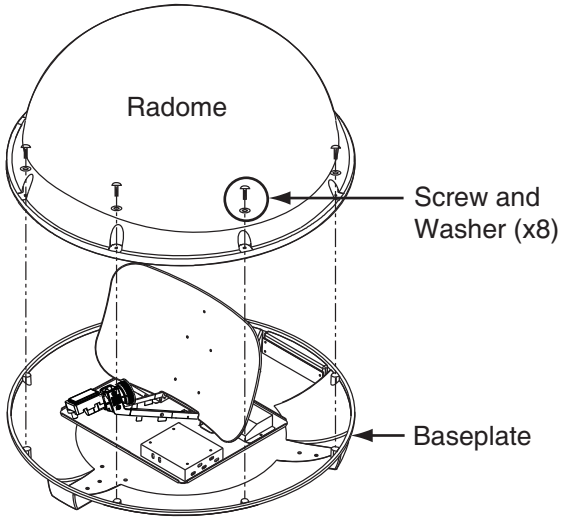


Figure 12: Radome Screws and Washers



7 Cut Out the Switchplate Hole

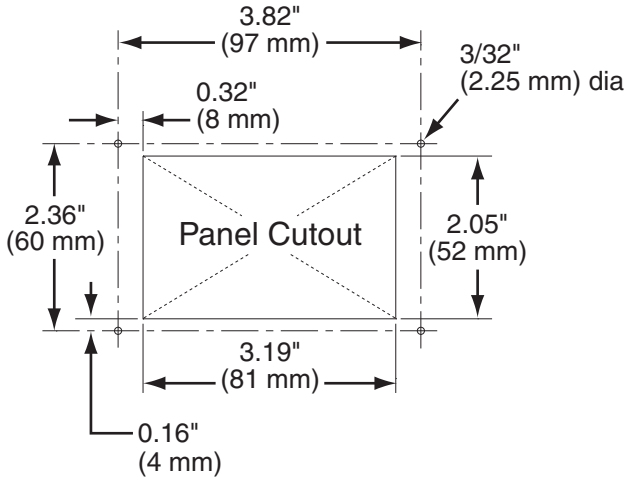
Follow the steps below to cut out the switchplate mounting hole.

a. Using the switchplate mounting template supplied in Appendix C on page 27, mark and cut out a hole in the mounting surface to accommodate the switchplate (see Figure 13).

b. Using the same template, mark the locations for the four switchplate mounting holes.

c. Drill a 3/32" (2.25 mm) hole at the four mounting hole locations. Later, you will mount the switchplate using four #6 screws.

Figure 13: Switchplate Cutout Dimensions



8 Wire the Antenna

Follow the steps below to wire the antenna.

a. At the location you chose in "Plan the Installation" on page 4, use a 3/4" (19 mm) hole saw to cut out a cable access hole in the vessel's deck (see Figure 14).

b. Smooth the edges of the hole to protect the cables.

c. **Circular only:**
If you plan to connect multiple receivers, label both ends of two RF cables for later reference. Label one cable "RF1" and the other "RF2."

d. Route the power/data cable and the RF cable(s) down through the cable access hole in the deck. Be sure to maintain a service loop on the deck (approximately 8" (20 cm)).

NOTE: *Ensure the rubber sealing boot on the RF cable is located on the end of the cable closest to the antenna's baseplate connectors.*

e. Connect an RF cable to the antenna's "RF1" connector. Hand-tighten first, then tighten with a 7/16" wrench for 1/4 turn.

NOTE: *Leave the protective cap installed on the RF2 connector unless you are connecting a second RF cable.*

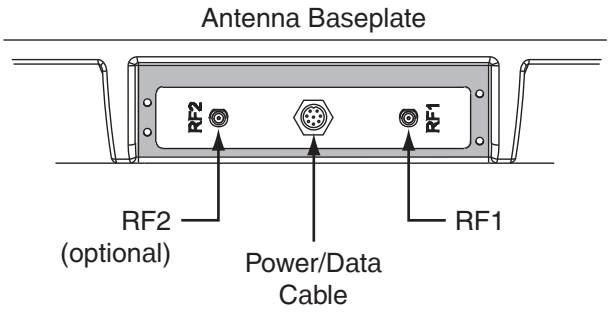
f. **Circular only:**
If you plan to connect multiple receivers, connect a second RF cable to the "RF2" connector.

g. Connect the power/data cable to the antenna's center connector and lock in place (see Figure 15).

h. Slide the rubber sealing boot up the RF cable until it covers the connector. This boot will help protect the connector from the elements.

Figure 14: Drilling the Cable Access Hole

Figure 15: Wiring the Antenna



9 Seal the Cable Access Hole

Follow the steps below to seal the cable access hole.

a. Seal the cable access hole on the deck with a liberal amount of silicone sealant, RTV, or equivalent to protect against leakage.

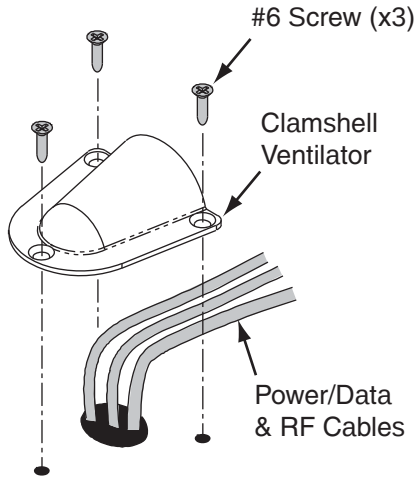
b. Install the clamshell ventilator, supplied in the kitpack, over the cable access hole using three of the supplied #6 screws (see Figure 16).

c. **Circular only:**
Route the RF cable(s) to the grounding block location you chose in "Plan the Installation" on page 4.

Linear only:
Route the RF cable to the receiver location.

d. Route the power / data cable through the switchplate cutout you made in "Cut Out the Switchplate Hole" on page 9.

Figure 16: Installing the Clamshell Ventilator



10 Wire the Receiver(s)

Circular Only

Follow the steps below to wire your receiver(s).

IMPORTANT!

If you cut an RF cable or used additional RF cabling, be sure to terminate all RF cables with Snap-N-Seal® F-connectors using an Augat IT1000 connector installation tool (KVH part #19-0242). Screw-on, push-on, twist-on, and other low-quality connectors will degrade system performance.

a. Connect the RF1 cable from the antenna to the grounding block, as shown in Figure 18. Label this grounding block connector "RF1."

b. If you connected an RF2 cable in "Wire the Antenna" on page 10, connect the RF2 cable from the antenna to the grounding block. Label this connector "RF2."

NOTE: *If you need to connect three or more receivers, refer to Appendix A on page 25.*

c. If you are connecting two receivers to the TracVision system, decide which receiver will be the primary receiver. The primary receiver controls satellite selection.

NOTE: *Unless a KVH Master Receiver Selector is installed, the secondary receiver will only be able to select channels carried on the satellite that is currently selected by the primary receiver.*

d. Connect the supplied 5-foot RF cable from the "RF1" connector on the grounding block to the "Satellite In" connector on the primary receiver (see Figure 18).

e. If you are connecting a second receiver, connect an RF cable from the "RF2" connector on the grounding block to the "Satellite In" connector on the secondary receiver.

f. Attach the supplied ground wire to either grounding screw on the grounding block. Connect the other end of the wire to a suitable vessel AC ground.

g. Using two supplied #6 screws, mount the grounding block.

Figure 17: Augat IT1000 Connector Installation Tool

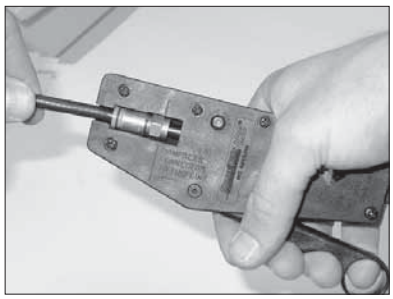
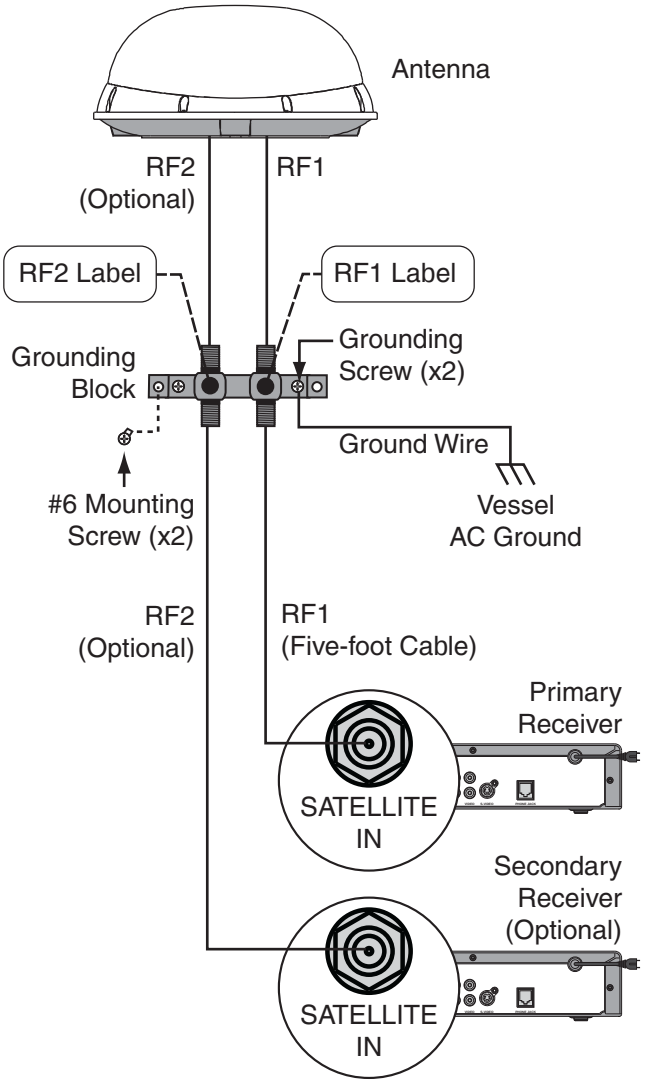


Figure 18: Grounding Block and Circular Receiver Wiring



10 Wire the Receiver

Linear Only

Follow the steps below to wire your receiver.

IMPORTANT!

If you cut the RF cable, be sure to terminate it with Snap-N-Seal® F-connectors using an Augat IT1000 connector installation tool (KVH part #19-0242). Screw-on, push-on, twist-on, and other low-quality connectors will degrade system performance.

a. Connect the RF1 cable from the antenna to the "Satellite In" connector on the receiver (see Figure 20).

b. Make sure the receiver is grounded. If the receiver has a 2-prong power plug, run a ground wire from the receiver's chassis to a suitable ground point. If a potential exists between AC and DC grounds, connect the wire to the switchplate's DC return instead.

Figure 19: Augat IT1000 Connector Installation Tool

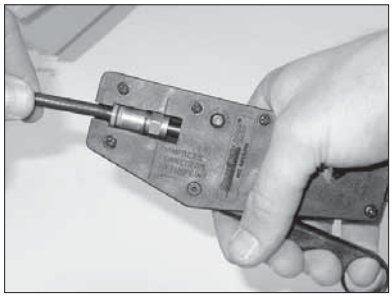
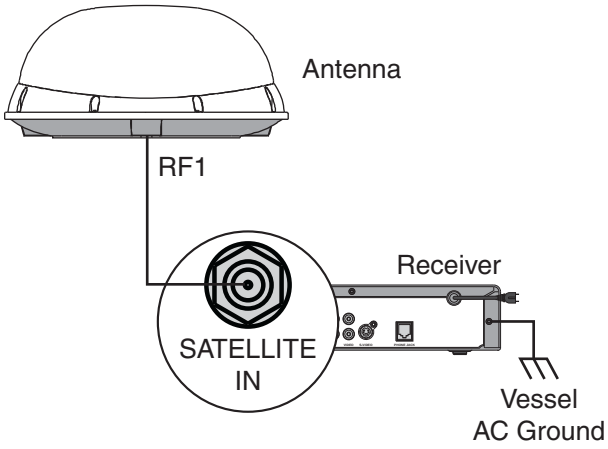


Figure 20: Linear Receiver Wiring



11 Wire the Switchplate

Follow the steps below to wire the switchplate.

CAUTION

For your own safety, disconnect vessel power before you connect any power wires. Test the circuit to ensure no power is present.

IMPORTANT!

The TracVision antenna requires a stable 12 VDC (4 amps continuous) power supply. Circular systems include a 15 VDC (4 A) power supply; linear systems do not. However, a power supply with a European-style power cord is available for purchase from KVH (KVH part #72-0312-01).

a. Connect the antenna's power / data cable to the switchplate's power / data connector and lock in place (see Figure 21).

b. Crimp the supplied terminal connectors onto the power supply's DC power wires.

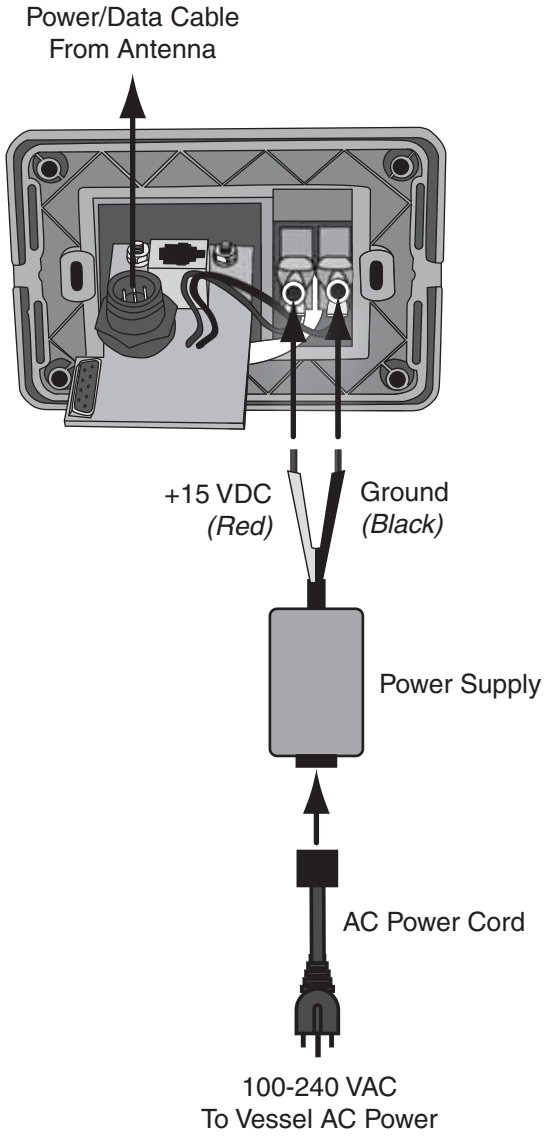
c. Carefully push the connectors onto the switchplate's input power terminals (see Figure 21).

NOTE: *Strain-relieve the wires to ensure a reliable connection.*

d. Connect the AC power cord to the power supply. Then plug the power cord into the vessel's AC power.

e. **Linear only:**
Skip to "Mount the Switchplate" on page 16.

Figure 21: Switchplate Wiring (KVH Power Supply Shown)



12 Install Service Key(s)

Circular Only

Find your U.S. or Canadian satellite TV service below to determine which service key(s), if any, you need to install. Store any unused service keys in the TracVision system's Welcome Kit.

DIRECTV

The system is already set up from the factory for DIRECTV service. No service keys are required to track the DIRECTV 101 and 119 satellites.

DISH Network

Choose from among three DISH Network modes:

Mode	Satellites
DISH 1000 / 129*	110, 119, and 129
DISH 1000 / 61	110, 119, and 61
DISH 500	110 and 119

* Optional Master Receiver Selector (KVH part #72-0412) required for automatic satellite switching; multiswitch (KVH part #72-0310) required for manual switching; see Appendix A on page 25.

Select a DISH 1000 mode for DISH Network's TurboHD service. Use the map in Figure 22 to determine the best mode for your region. Check with DISH Network regarding local channels.

DISH 1000/129

No service keys are required.

DISH 1000/61

Connect service key "A" to the front of the switchplate (see Figure 24).

DISH 500

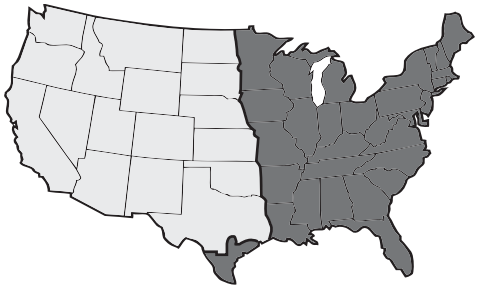
Connect both service keys to the switchplate (see Figure 24 and Figure 25).

Bell TV (Formerly ExpressVu)

Connect service key "B" to the back of the switchplate to set up the system to track the Bell TV 91 and 82 satellites (see Figure 25).

***NOTE:** If you wish to set up the system to track satellites not listed above, do not connect any service keys. Refer to Appendix B on page 26.*

Figure 22: Recommended DISH 1000 Satellites



= DISH 129 Satellite Recommended

= DISH 61 Satellite Recommended

Figure 23: Service Keys Usage

Mode	Key A	Key B
DISH 1000 / 129	-	-
DISH 1000 / 61	Connect	-
DISH 500	Connect	Connect
Bell TV	-	Connect

Figure 24: Connecting Service Key A (Front of Switchplate)

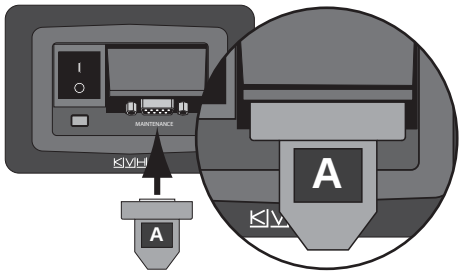
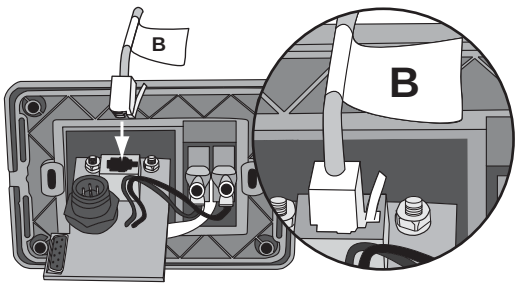


Figure 25: Connecting Service Key B (Back of Switchplate)



13 Mount the Switchplate

Follow the steps below to mount the switchplate.

a. Fit the switchplate flush into the panel cutout you made in "Cut Out the Switchplate Hole" on page 9.

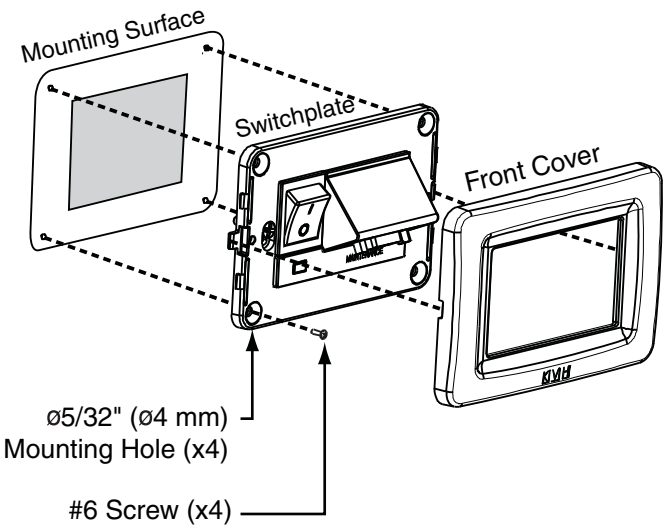
b. Drill out four 5/32" (4 mm) mounting holes in the switchplate's screw cavities (see Figure 26).

c. Mount the switchplate to the mounting surface using four #6 screws.

d. Gently snap the switchplate cover onto the front of the switchplate to conceal the mounting screws.

e. **Circular only**:
Skip to "Set Up and Test the System" on page 20.

Figure 26: Switchplate Mounting



14 Install Satellites

Linear Only

Follow the steps below to configure the TracVision system to track a pair of linearly polarized satellites. To complete this procedure, you will need to connect a PC to the antenna and use the KVH Flash Update Wizard to install your satellites.

NOTE: *The Flash Update Wizard is available to KVH-authorized dealers through the KVH Partner Portal.*

a. Connect a PC to your TracVision system, as described in the Flash Update Wizard's Help file. Then enter the commands below into the Wizard's "Antenna Comms" window.

NOTE: *For details on entering antenna commands, refer to the Flash Update Wizard's Help file.*

b. Apply power to the TracVision system and set the switchplate's POWER switch to the ON (|) position (see Figure 27). Wait two minutes for system startup.

c. In the Wizard's "Antenna Comms" window, type **HALT** then press Enter.

d. Choose your desired satellites from the satellite library (see Figure 28).

e. Type the following command then press Enter. Be sure to use the proper install name(s) for your selected satellite(s).

SATINSTALL,<SAT_A_NAME>, <SAT_B_NAME>

NOTE: *Select the satellite you want to track first as "SAT_A". Once the procedure is complete, the antenna will begin tracking that satellite.*

f. Type **ZAP** then press Enter to restart the antenna. Wait two minutes for system startup.

g. Keep your PC connected to the antenna. You will need to enter additional commands in the following steps.

Figure 27: Switchplate ON/OFF Switch

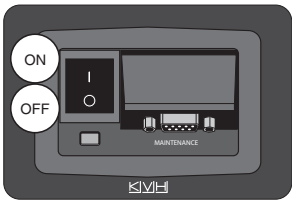


Figure 28: Linear Satellite Library

Satellite Name	Longitude	Install Name
Arabsat	26° E	ARABSAT
Astra 1	19° E	ASTRA1
Astra 2N	28° E	ASTRA2N
Astra 2S	28° W	ASTRA2S
Eutelsat W3A	7° E	EUTEL_W3A
Hispasat	30° W	HISPASAT
Hotbird	13° E	HOTBIRD
Hotbird WB	13° E	HOTBIRDWB
Nilesat 101	7° W	NILESAT
Pas 9	58° W	PAS_9
Sirius	5° E	SIRIUS
Thor	8° W	THOR
Turksat 1C	42° E	TURKSAT1C
None	-	None

Figure 29: Satellite Installation Example

Installing ASTRA2S and HOTBIRD
HALT SATINSTALL,ASTRA2S,HOTBIRD ZAP

15 Find the Skew Angle

Linear Only

Follow the steps below to determine the ideal skew angle for your location and selected satellite(s). You will set the LNB to this angle in the next step.

TIP: *Your service provider might also be able to provide you with the correct skew angle for your selected satellite.*

a. Using a GPS or the map and table in Figure 30, determine your latitude and longitude.

b. Using the PC connected to your TracVision system, enter the commands below into the Flash Update Wizard's "Antenna Comms" window.

c. Type **HALT** then press Enter.

d. Type **DEBUGON** then press Enter.

e. Using the table below, type the following command to enter your latitude and longitude.

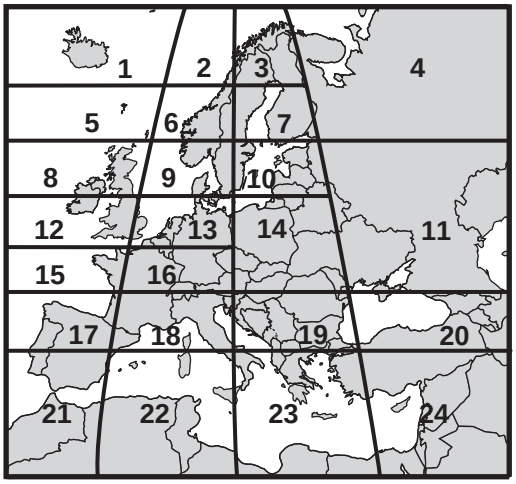
GPS,*XX*,*A*,*YYY*,*B*

Variable	Value
XX	Latitude (0-90)
A *(Enter S or N)*	S (South)
	N (North)
YYY	Longitude (0-180)
B *(Enter E or W)*	E (East)
	W (West)

f. Type **ZAP** then press Enter to restart the antenna. Wait two minutes for system startup.

g. Type **SKEWANGLE** then press Enter to display the skew angle for your location and currently selected satellite. If you installed multiple satellites, type **AVGSKEW** then press Enter to display the average skew.

Figure 30: Approximate European Latitude/Longitude Values



Grid #	Latitude	Longitude
1	67° N	7° W
2	67° N	7° E
3	67° N	22° E
4	65° N	45° E
5	63° N	7° W
6	63° N	7° E
7	63° N	22° E
8	57° N	7° W
9	57° N	7° E
10	57° N	22° E
11	55° N	40° E
12	53° N	7° W
13	53° N	7° E
14	50° N	22° E
15	47° N	7° W
16	47° N	7° E
17	43° N	7° W
18	43° N	7° E
19	43° N	22° E
20	43° N	37° E
21	36° N	7° W
22	36° N	7° E
23	36° N	22° E
24	36° N	37° E

16 Set the Skew Angle

Linear Only

Follow the steps below to set the antenna's LNB to the skew angle you determined in "Find the Skew Angle" on page 18.

a. Turn off the antenna and disconnect vessel power.

b. Using a 9/64" allen wrench, loosen the two LNB bracket screws securing the LNB in the following manner: loosen one screw one full turn, then loosen the second screw one full turn; repeat until the LNB can be rotated freely (see Figure 31).

IMPORTANT!

Be sure to alternate loosening or tightening the LNB bracket screws. Failure to do so might cause unequal pressure on the LNB, which can impair reception.

c. Rotate the LNB to align the skew arrow with the skew angle that you determined in the previous step (see Figure 31).

d. Alternate tightening each screw until the LNB no longer rotates.

e. Tighten the screws one additional 1/4 turn.

f. Reinstall the radome using the eight screws and washers you removed in "Remove the Mounting Plate" on page 5 (see Figure 32).

g. Restore power to the TracVision system.

Figure 31: LNB Bracket Assembly

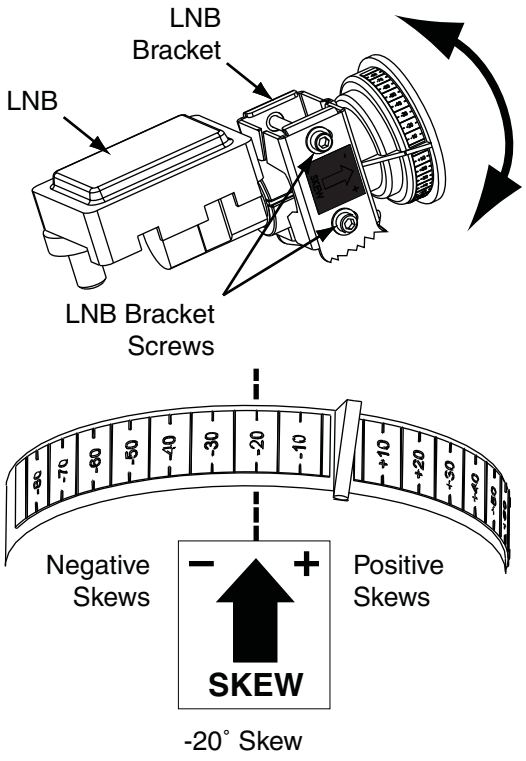
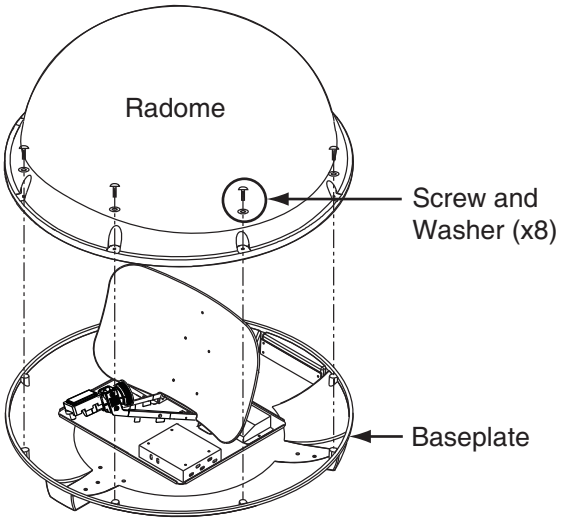


Figure 32: Radome Screws and Washers



17 Set Up and Test the System

Follow the steps below to set up the system for your desired satellite TV service (if necessary) and test the system for proper operation.

a. Stop the vessel in a blockage-free area. The antenna requires an unobstructed view of the sky to receive satellite signals.

b. **DISH Network or Bell TV only:** Follow the step-by-step setup instructions provided in the *User's Guide* to configure your DISH Network or Bell TV receiver(s) for your selected TracVision mode.

IMPORTANT!

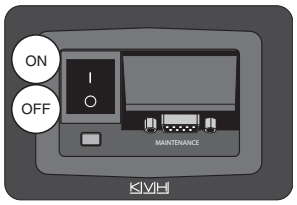
Each DISH Network or Bell TV receiver must be configured to work with the TracVision system, as explained in the *User's Guide*.

c. Turn on the receiver(s) and TV(s). For details on operating the receiver, refer to your selected receiver's user manual.

d. Set the switchplate's POWER switch to the ON (|) position (see Figure 33). Within a few minutes, a picture should appear on the TV.

e. When you have finished testing, set the switchplate's POWER switch to the OFF (O) position.

Figure 33: Switchplate ON/OFF Switch



18 Educate the Customer

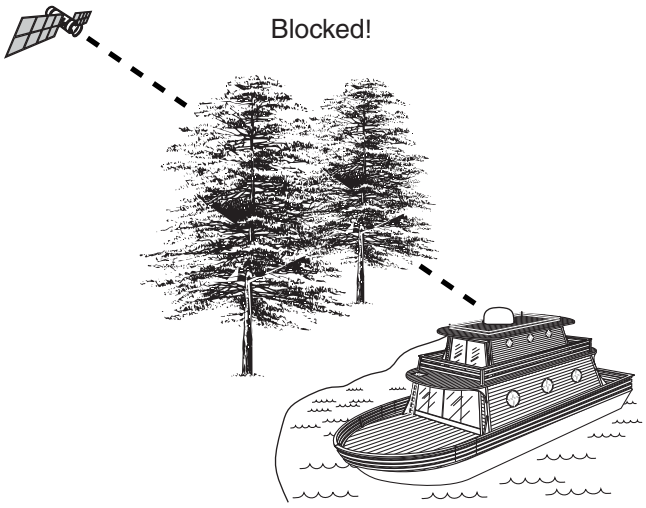
Give the Welcome Kit to the customer and explain how to use the product. Also be sure the customer understands the following:

- The receiver(s) must be activated before it can decode satellite TV signals. Refer to Figure 34 for activation details for North American receivers.
- The antenna must have a clear view of the sky to receive satellite TV. Common causes of blockage include trees, buildings, bridges, and mountains (see Figure 35).
- Keep the radome installed on the antenna at all times. The radome protects the antenna's moving parts from wind, rain, and debris.
- Heavy rain or snow might temporarily interrupt satellite reception.
- Clean the antenna periodically. Dirt buildup on the radome can affect satellite TV reception.
- **DISH 1000 modes only:**
  You might need to change the operating mode when traveling between regions (see "Install Service Key(s)" on page 15).
- **Linear only:**
  When you travel to other geographic locations, you might need to adjust the skew angle of your antenna's LNB (see "Find the Skew Angle" on page 18).
- Please register the system with KVH. The registration process is quick, easy, online, and ensures the best possible service from KVH. Visit **www.kvh.com/register** or refer to the Product Registration Form for details.
- The vessel must be located within the selected satellite's footprint in order to receive its signals. To view satellite coverage maps, visit **www.kvh.com/footprint**.
- If you need to paint the radome, use only non-metallic automotive paint without a primer coat. Any paint that contains metal will block satellite signals and impair reception.
- Refer to the *User's Guide* for complete operation and troubleshooting information.

Figure 34: North American Receiver Activation Information

Service:	**Call to Activate:**
DIRECTV	1-866-551-8004 *(24 hours, 7 days a week)*
DISH Network	1-866-399-8509 *(Mon.-Fri., 8:30am - 5pm ET)*
Bell TV	1-888-759-3474 (SKY-DISH) *(24 hours, 7 days a week)*

Figure 35: Blockage Example



Appendices

This section includes the switchplate mounting template and provides supplemental instructions for special or advanced configurations.

Contents

A. Connecting 3 or More Receivers 25

B. Choosing Alternate Satellites..... 26

C. Switchplate Template 27

A Connecting 3 or More Receivers

Circular Only

If you need to connect three or more receivers, **or you set up the system for DISH Network's 129 satellite (one or more receivers)**, install an active (powered) multiswitch or Master Receiver Selector between the grounding block and the receivers, as shown in Figure A-1.

NOTE: *If you need to connect more than four receivers, please contact KVH Technical Support.*

Active Multiswitch

The optional Eagle Aspen multiswitch with AC/DC power supply (KVH part #72-0310) allows you to connect up to four receivers to the TracVision system. However, since a multiswitch interrupts satellite switching communications between the receiver and the antenna, you will need to manually switch between your selected satellites.

With the TV/SAT Switch (KVH part #01-0245) installed, you can manually switch between a pair of satellites at the press of a single button. For alternative manual switching options, such as typing switch commands via a PC, please contact KVH Technical Support.

IMPORTANT!

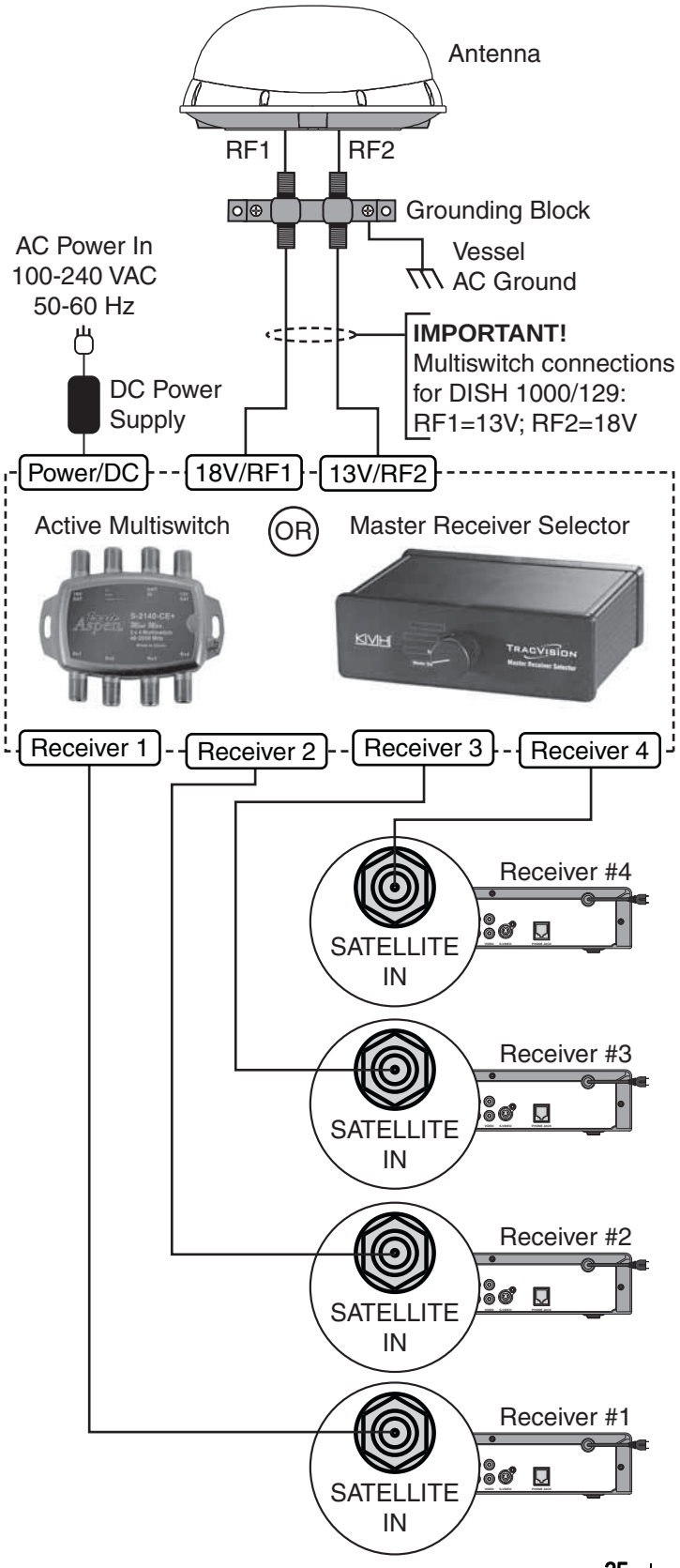
The TV/SAT Switch only supports dual-satellite configurations, so it cannot be used with three-satellite DISH 1000 modes. If you need to connect three or more receivers in a DISH 1000 mode, the best option is the Master Receiver Selector (see below).

Master Receiver Selector

The optional KVH Master Receiver Selector (KVH part #72-0412) is an enhanced multiswitch that provides the following capabilities:

- Automatic satellite switching in any operating mode, including DISH 1000/129.
- Support for multiple receivers.
- Capability for the user to select, at any time, which receiver controls satellite selection. Simply turn the knob!

Figure A-1: Wiring Up to 4 Receivers



B Choosing Alternate Satellites

Circular Only

Although most installations do not require different satellites than those listed in "Install Service Key(s)" on page 15, you may set up your TracVision system to track a pair of alternate satellites.

To do so, you need to connect a PC to the antenna and use the KVH Flash Update Wizard to install your alternate satellites. The TracVision system includes a satellite library that contains the most commonly used satellites. Follow the steps below to configure the system to track satellites from this satellite library.

NOTE: *The Flash Update Wizard is available to KVH-authorized dealers through the KVH Partner Portal.*

a. Connect a PC to your TracVision system, as described in the Flash Update Wizard's Help file. Then enter the commands below into the Wizard's "Antenna Comms" window.

NOTE: *For details on entering antenna commands, refer to the Flash Update Wizard's Help file.*

b. Set the switchplate's POWER switch to the ON (|) position. Wait two minutes for system startup.

c. Type **HALT** then press Enter.

d. Choose your desired satellites from the satellite library (see Figure B-1).

e. Type the following command then press Enter. Be sure to use the proper install name(s) for your selected satellite(s).

SATINSTALL,<SAT_A_NAME>, <SAT_B_NAME>

NOTE: *Select the satellite you want to track first as "SAT_A". Once the procedure is complete, the TracVision system will begin tracking that satellite.*

f. Type **ZAP** then press Enter to restart the antenna. Wait two minutes for system startup.

Figure B-1: Circular Satellite Library

Service	Satellite	Install Name
DIRECTV	72° W	DSS_72
	101° W	DSS_101
	110° W	DSS_110
	119° W	DSS_119
DISH Network	61° W	ECHO_61
	110° W	ECHO_110
	119° W	ECHO_119
	129° W*	ECHO_129
Bell TV (ExpressVu)	82° W	EXPRESSVU
	91° W	EXPRESSTV
None	-	NONE

* *Master Receiver Selector or active multiswitch required for DISH Network's 129 satellite; see Appendix A on page 25.*

Figure B-2: Example of Choosing an Alternate Satellite

Installing DISH Network 119° W Only
HALT SATINSTALL,ECHO_119,NONE ZAP

C Switchplate Template